

Application No.: 10/501,564
Amendment Dated: February 15, 2007
Reply to Office Action of: November 15, 2006

MAT-8574US

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously Presented) A method of managing mobility of a mobile terminal on at least one domain network including a plurality of subnets, each subnet having at least one home agent apparatus, comprising:

determining a home agent for the mobile terminal to perform location management of the mobile terminal, wherein the mobile terminal has communications with an access point apparatus arranged on one of the plurality of subnets and moves between the one subnet and the at least one domain network which are different in service form;

registering a main home address by the mobile terminal provided from a main home agent apparatus to a server for managing an address of the mobile terminal to have a connection to the at least one domain network; and

registering a sub-home address to the main home agent apparatus, as a care of address, for use on another domain network different in service form, when the mobile terminal moves to the other domain network, wherein the sub-home address is registered as the care of address for use on the other domain network for a specified time period;

responsive to the mobile terminal moving to another subnet of the plurality of subnets for a threshold period, changing the main home agent apparatus to another one of the home agent apparatus.

Application No.: 10/501,564
Amendment Dated: February 15, 2007
Reply to Office Action of: November 15, 2006

MAT-8574US

2. (Original) A method of managing mobility according to claim 1, wherein the mobile terminal previously stores information about a home agent apparatus to become a candidate for the main home agent apparatus.

3. (Previously Presented) A method of managing mobility according to claim 1, further comprising a step of acquiring by the mobile terminal the information about a home agent apparatus to become a candidate for the main home agent apparatus from the domain network.

4. (Previously Presented) A method of managing mobility according to claim 2, further comprising a step of acquiring by the mobile terminal the information about a home agent apparatus to become a candidate for the main home agent apparatus from the domain network.

5. (Previously Presented) A method of managing mobility according to claim 1, wherein, in the step of determining the home agent, the mobile terminal changes the main home agent apparatus based on the information about respective home agent apparatus.

6. (Previously Presented) A method of managing mobility according to claim 2, wherein, in the step of determining the home agent, the mobile terminal changes the main home agent apparatus based on the information about respective home agent apparatus.

7. (Previously Presented) A method of managing mobility according to claim 3, wherein, in the step of determining the home agent, the mobile terminal changes the main home agent apparatus based on the information about respective home agent apparatus.

8. (Previously Presented) A method of managing mobility according to claim 1, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective home agent apparatus, based on a preference indicator of the information.

9. (Previously Presented) A method of managing mobility according to claim 2, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective home agent apparatus, based on a preference indicator of the information.

10. (Previously Presented) A method of managing mobility according to claim 3, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective home agent apparatus, based on a preference indicator of the information.

11. (Previously Presented) A method of managing mobility according to claim 1, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective home agent apparatus, based on an access frequency to the respective home agent apparatus.

12. (Previously Presented) A method of managing mobility according to claim 2, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective home agent apparatus, based on an access frequency to the respective home agent apparatus.

13. (Previously Presented) A method of managing mobility according to claim 3, wherein, in the step of determining the home agent, the mobile terminal determines the main home agent apparatus from the information about respective

home agent apparatus, based on an access frequency to the respective home agent apparatus.

14. (Previously Presented) A method of managing mobility according to claim 1, further comprising making a request for a registration to a respective home agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

15. (Previously Presented) A method of managing mobility according to claim 2, further comprising making a request for a registration to a respective home agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

16. (Previously Presented) A method of managing mobility according to claim 3, further comprising making a request for a registration to a respective home agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

17. (Previously Presented) A method of managing mobility according to claim 5, further comprising making a request for a registration to a respective home

agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

18. (Previously Presented) A method of managing mobility according to claim 7, further comprising making a request for a registration to a respective home agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

19. (Previously Presented) A method of managing mobility according to claim 11, further comprising making a request for a registration to a respective home agent apparatus arranged in a domain network to be connected through one or more link layers, at least one of the link layers being placed in an operational state to acquire an IP address possessed by the mobile terminal, wherein the step of registering the sub-home address is performed when the registration request is granted by the respective home agent apparatus.

20. (Previously Presented) A mobile terminal for use with at least one domain network including a plurality of subnets comprising:

a main home agent selecting section for selecting a main home agent apparatus to request location management and making a request for registering a home address provided from the main home agent apparatus to a server for

managing an address of the mobile terminal to be connected to the at least one domain network;

a mobile IP processing section for notifying, when the mobile terminal has moved to a domain network different in service form, a sub-home agent apparatus for requesting location management on the other domain network different in service form of a home address for use on the other domain network different in service form together with a care of address for use on a subnet of the other domain network different in service form, based on a mobile IP protocol, wherein the sub-home address is registered as the care of address for use on the other domain network for a specified time period; and

a home agent registering section for notifying the main home agent apparatus of the main home address and a sub-home address for use on the other domain network different in service form,

wherein, responsive to the mobile terminal moving to another subnet of the plurality of subnets for a threshold period, the main home agent apparatus is changed to another one of the home agent apparatus.

21. (Previously Presented) A mobile terminal according to claim 20, further comprising a home domain storing section for storing a home agent list as information about respective home agent apparatus to become a candidate for the main home agent apparatus, wherein the main home agent selecting section selects the main home agent apparatus from the home agent list.

22. (Previously Presented) A mobile terminal according to claim 21, wherein the main home agent selecting section acquires information about the respective home agent apparatus from the domain network and stores the information about the respective home agent apparatus to the home domain storing section.

Application No.: 10/501,564
Amendment Dated: February 15, 2007
Reply to Office Action of: November 15, 2006

MAT-8574US

23. (Previously Presented) A mobile terminal according to claim 21, wherein the main home agent selecting section changes the main home agent apparatus based on information from the home agent list stored in the home domain storing section.

24. (Previously Presented) A mobile terminal according to claim 22, wherein the main home agent selecting section changes the main home agent apparatus based on information from the home agent list stored in the home domain storing section.

25. (Previously Presented) A mobile terminal according to claim 21, wherein the main home agent selecting section selects the main home agent apparatus from the home agent list stored in the home domain storing section, on the basis of a priority of information about a home agent apparatus.

26. (Previously Presented) A mobile terminal according to claim 22, wherein the main home agent selecting section selects the main home agent apparatus from the home agent list stored in the home domain storing section, on the basis of a priority of information about the respective home agent apparatus.

27. (Previously Presented) A mobile terminal according to claim 21, wherein the main home agent selecting section selects, as the main home agent apparatus, one of the respective home agent apparatus having an access frequency equal to or greater than a predetermined value from the home agent list stored in the home domain storing section.

28. (Previously Presented) A mobile terminal according to claim 22, wherein the main home agent selecting section selects, as the main home agent apparatus, one of the respective home agent apparatus having an access frequency

equal to or greater than a predetermined value from the home agent list stored in the home domain storing section.

29. (Previously Presented) A mobile terminal according to claim 20, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

30. (Previously Presented) A mobile terminal according to claim 21, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

31. (Previously Presented) A mobile terminal according to claim 22, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

32. (Previously Presented) A mobile terminal according to claim 23, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration

request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

33. (Previously Presented) A mobile terminal according to claim 25, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

34. (Previously Presented) A mobile terminal according to claim 27, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through one or more link layers, at least one of the link layers being placed in an operational state so that when receiving a grant for the registration request by the sub-home agent apparatus, a notification of a sub-home address to the main home agent apparatus is started.

35. (Previously Presented) A mobile terminal according to claim 20, wherein the mobile IP processing section, when receiving a multi-encapsulated packet, takes a source address described in an innermost header as a destination of registering location.

36. (New) A mobile terminal according to claim 1, wherein the mobile terminal measures a composite time corresponding to the mobile terminal being on the other subnet, and when the composite time reaches the threshold period, the mobile terminal changes to the other one of the home agent apparatus, corresponding to the other subnet.